

Remarks

1. As you requested, I have reviewed the specification and I have amended several paragraphs to clean up a number of errors. New paragraphs follow for these paragraphs:

[0001] This application is not a continuation in part of the provisional patent applications, but it does claim priority to their filing dates. Correction was made. I added U. S. Patent No. 4,665,357 "Flat Matrix Transformer" as a reference.

[0011] I have deleted a phrase " and given the constant current output, the frequency would not vary much at all, only the duty cycle.", as it may not be correct. It is not important to the teachings of either the invention or its preferred embodiments.

[0037] Typo corrected. "is" should be "are"

[0041] Typo corrected. "a" should be "an"

[0063] Typo corrected. "Fifteen" should be "Figure 15"

[0065] Typos corrected. "negatively" should be negative', add two hyphens (-), deleted extraneous period (.).

2. Amended claims follow.

2.1 I agree with your rejection of claims 1-10. Accordingly, I have canceled claims 1-10.

2.2 As you suggested, I have rewritten claims 11 and 12 as independent claims including all limitations of the base claim and intervening claims.

2.3. I have amended the defendant claim 13 to delete an unnecessary limitation, "a quantity m of hysteresis feedback resistors (etc.)" so that the claimed matter is simply "wherein each of the m comparator means has hysteresis." The phrase "has hysteresis" is defined in [0065], "A comparator means is said to "have hysteresis: if its positive-going threshold voltage is higher than its negative[[ly]]-going threshold voltage".

2.4. For the record, I call your attention to Herbert (US 4,665,357) and I have added that patent to [0001] as a reference. '357 teaches a matrix transformer switching arrangement for making a variable ratio embodiment of the matrix transformer. Synchronous rectifiers were not practical when that patent was filed and '357 does not teach nor suggest the present invention, with reference to figure 9 and claim 16.

2.5 I do not agree that claim 15 is anticipated by Herbert (US 6,121,761). '761 does not teach:

"the m constant current means each having an internal switching means,

the internal switching means each having a first internal switch state in which the current output of the constant current means is internally short circuited ---"

See [0055] as the disclosure in the specification for the matter of claim 15. While the preferred embodiment of the first internal switching means uses a matrix transformer, as shown in figure 9 and claimed in claim 16, I don't believe that it is necessary to limit the claimed subject matter to matrix transformers alone. Otherwise, the patent would be vulnerable to a copyist who used, say, a multi-phase buck converter constant current source as in, say, figure 5, but did not use the switch to ground as shown in figure 5 and claimed in claims 11 and 12, but rather shorted the inductors of the multi-phase buck converters internally as claimed in claim 15.

Claim 15 has been amended, however, as a careful reading revealed that the relationship between the state of the m switching means and the internal switching means of the m constant current means was not well defined. This is neither new matter nor a narrowing of the claims, it is just a more precise recitation of what I intended to claim as my invention at the time that the patent application was filed.

2.6. I have added new dependent claims 17-20, applying to 15 the voltage control means of the original claims 11-14. I believe that this is not new matter. While the specification did not show all combinations of all current switching means with all voltage control means, I believe that one skilled in the art of power converters would understand that the current switching means and voltage control means can be combined in various combinations, including those taught in claims 17-20, to make various embodiments of a switched current power converter, and that they would know how to make the circuit modifications in the logic circuits to use the invention in various embodiments without undue experimentation.